Zambia Country Report

PASCAR and WHF Cardiovascular Diseases Scorecard project

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Abstract

Data collected for the World Heart Federation's Scorecard project regarding the current state of cardiovascular disease prevention, control and management, along with related non-communicable diseases in Zambia are presented. Furthermore, the strengths, threats, weaknesses and priorities identified from these data are highlighted in concurrence with related sections in the attached infographic. Information was collected using open-source datasets available online and relevant government publications.

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On behalf of the World Heart Federation (WHF), the Pan-African Society of Cardiology (PASCAR) co-ordinated data collection and reporting for the country-level Cardiovascular Diseases Scorecard for Africa.[1,2] The Zambia Heart and Stroke Foundation (ZAHESFO), a member of the WHF and PASCAR collaborator, assisted the team in collating and verifying these data. In this report, we review strengths, threats, weaknesses and priorities identified from the collected data, along with needs to be considered in conjunction with the associated sections provided in the accompanying infographic. Datasets that were used included open-source data from the World Bank, the World Health Organization (WHO), Institute for Health Metrics and Evaluation, the International Diabetes Federation and several government publications.

Part A: Demographics

According to the World Bank (2018), Zambia is a lower-middle-income country with 56% of its people living in rural areas.[3] In 2015, 57.5% of the population were living below the US$1.9-a-day ratio. Life expectancy at birth in 2018 was 61 and 66 years for men and women, respectively. The general government health expenditure was 1.73% of the gross domestic product (GDP) in 2017, while the country's GDP per capita was US$1539.9 in 2018.[4]

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Part B: National cardiovascular disease epidemic

The national burden of cardiovascular disease (CVD) and non-communicable diseases (NCD) risk factors

In comparison to the neighbouring countries, Tanzania and Mozambique, Zambia's premature deaths attributable to CVD (30–70 years old) is 2% higher, at 10%.[5] In 2017, the age-standardised total CVD death rate was 10.3%, which is lower than the global rate of 31.8%.[6] The percentage of disability-adjusted life years (DALYs) resulting from CVD was 4.18%, with the prevalence of atrial fibrillation (AF) and atrial flutter at 0.1%.[6] The prevalence of rheumatic heart disease (RHD) was 0.98%, while the total RHD mortality rate was 0.14% of all deaths (Table 1).[6]

Tobacco and alcohol

The prevalence of tobacco use in adult men 15 years and older was 26.5% in 2015, which, in 2017, was found to be 24% in 18–69-year-old respondents in the WHO STEPwise approach to surveillance (STEPS).[4,7] In 2015, only 4.6% of adult women used tobacco, while of those who participated in STEPS, 7.8% was using tobacco.[4,7] The smoking prevalence among adolescents aged 13–15 years was 24.9% for boys and 25.8% for girls.[4] Country data available for the estimated annual direct cost of tobacco use indicated approximately US$200.[8] The premature CVD mortality rate attributable to tobacco is 4% of the total mortality rate, which is lower than the global 10%.[9] The three-year (2016–18) average recorded alcohol consumption per capita (≥ 15 years old) was 3.9 litres (Table 1).[4]

Raised blood pressure and cholesterol

In 2015, the percentage of men and women 25 years and older with raised blood pressure (BP) levels (systolic BP ≥ 140 mmHg or diastolic BP ≥ 90 mmHg) was 27.6 and 26.5%, respectively.[4] STEPS data, conversely, revealed 19.1% of Zambians had raised BP or were on medication in 2017 (Table 1).[7] The percentage of DALYs lost because of hypertension was 2.32%, whereas the mortality rate caused by

hypertensive heart disease was 0.93% in 2017 (Table 1).[6] The estimated age-standardised raised total cholesterol level (TC, ≥ 5.0 mmol/l) was 27.7% in 2008,[4] while in 2017, Zambians aged 18–69 years old had a prevalence of only 7.4% (Table 1).[7]

Physical activity

In 2016, the percentage of adolescents 11–17 years old who were insufficiently active [< 60 minutes of moderate- to vigorous-intensity physical activity (PA) daily] was 89.3%.[10] For adults, the age-standardised prevalence was 22.1% of those who were insufficiently active (< 150 minutes of moderate-intensity PA per week or < 75 minutes of vigorous-intensity PA per week) in the same year (Table 1).[4]

Overweight and obesity

The prevalence of overweight [body mass index (BMI) ≥ 25 to < 30 kg/m^2] and obesity (BMI ≥ 30 kg/m^2) in adults 25 years and older was 27.8 and 8.1%, respectively in 2016.[4] On the other hand, of the STEPS respondents, 13.2% of men and 20.2% of women were overweight, while far more women (12.3%) than men (3%) were found to be obese (Table 1).[7]

Diabetes

The percentage of the defined population with a fasting glucose level ≥ 7.0 mmol/l or on medication for raised blood glucose (age-standardised) in 2014 was 6.5% for men and 6.7% for women.[4] In 2019, the prevalence of age-adjusted (adults 20–79 years) diabetes was 4.5%, which is lower than the global estimate of 9.3% but higher than that of Africa's 3.9% (Table 1).[11]

Part C: Clinical practice and guidelines

Health system capacity

Zambia had an average of 11.9 physicians and 13.4 nurses per 10 000 of the population in 2018, and 20 hospital beds

Table 1. Cardiovascular disease indicators for Zambia

Indicators	*Male*	*Female*	*Total*	*Year*
Status of the national CVD epidemic				
Premature CVD mortality (30–70 years old) (% deaths)	-	-	10	2012
Total CVD mortality (% of deaths)	9.8	10.9	10.3 (31.8)*	2017
DALYs attributable to CVD (%)	4.29	4.04	4.18 (14.7)*	2017
AF and atrial flutter (%)	0.12	0.09	0.1 (.5)*	2017
Total RHD mortality (% of deaths)	0.12	0.16	0.14 (.5)*	2017
Prevalence of RHD (%)	0.88	1.09	0.98 (.5)*	2017
Tobacco and alcohol				
Prevalence of adult tobacco use (18–69 years old) (%)#	24.0 (36.1)**	7.8 (6.8)**	-	2017
Prevalence of youth (13–15-year-olds) tobacco use (%)	24.9 (18.2)**	25.8 (8.3)**	-	2011
Estimated direct (healthcare-related) cost of tobacco use in your population (in current US$)			200 m	2019
Proportion of premature CVD mortality attributable to tobacco (%)	-	-	4 (10)**	2004
Recorded alcohol consumption per capita (≥ 15 years) (litres of pure alcohol) (three-year average)			3.9	2016–18
Raised blood pressure and cholesterol				
Population with raised BP (SBP ≥ 140 mmHg or DBP ≥ 90 mmHg) (18–69 years old) (%)#	20.5 (24.1)**	17.6 (20.1)**	19.1 (22.1)**	2017
Population with raised TC (≥ 5.0 mmol/l) (18–69 years old) (%)#	4.5	9.3	7.4 (38.9)**	2017
DALYs attributable to hypertension (%)	2.01	2.7	2.32 (8.7)*	2017
Mortality caused by hypertensive heart disease (% of deaths)	0.63	1.33	0.93 (1.7)*	2017
Physical activity				
Adolescents (11–17 years old) who are insufficiently active (< 60 minutes of moderate- to vigorous-intensity PA daily) (%)	89.4	89.1	89.3 (80.7)**	2016
Adults (age-standardised estimate) who are insufficiently active (< 150 minutes of moderate-intensity PA per week, or < 75 minutes of vigorous-intensity PA per week) (%)	19.1	25.0	22.1 (27.5)**	2016
Overweight and obesity (Adults 18–69 years old)				
Prevalence of overweight (BMI ≥ 25–< 30 kg/m^2) (%)#	13.2	20.2	16.7 (38.9)**	2017
Prevalence of obesity (BMI ≥ 30 kg/m^2) (%)#	3.0	12.3	7.5 (13.1)**	2017
Diabetes				
Defined population with fasting glucose ≥ 126 mg/dl (7.0 mmol/l) or on medication for raised blood glucose (age-standardised) (%)	6.5 (9)**	6.7 (8)**	-	2014
Prevalence of diabetes (20–79 years old) (%)	-	-	4.5 (9.3)##	2019

CVD, cardiovascular disease; DALYs, disability-adjusted life years; AF, atrial fibrillation; RHD, rheumatic heart disease; SBP, systolic blood pressure; DBP, diastolic blood pressure; TC, total cholesterol; PA, physical activity; BMI, body mass index.
*IHME Global Health data exchange[6]
**WHO global data[4]
#STEPS data[7]
##IDF *Diabetes Atlas*.[11]

per 10 000 people in 2010.[4] A locally developed clinical tool was adapted from the WHO Essential Non-Communicable Disease tool (WHO PEN) to measure NCD management at healthcare facilities.[12] Locally relevant clinical guidelines for CVD prevention (within the last five years) have also been published.[13] No guidelines for the treatment of tobacco dependence are available or locally relevant (national or sub-national) clinical guidelines for the detection and management of AF. However, clinical guidelines have been developed to manage pharyngitis, acute rheumatic fever (ARF) and RHD.[14] Zambia was one of the lower-middle-income countries to participate in the REMEDY study that reported a hospital-based registry for RHD and rheumatic fever.[15,16] However, there is no system to measure the quality of care provided to people who have suffered acute cardiac events. Regarding the detection and management of diabetes, Zambia does have guidelines in place.[17]

Essential medicines and interventions

Angiotensin converting enzyme (ACE) inhibitors, aspirin, β-blockers and metformin are included in the list for essential medicines at primary care facilities in the public health sector,[4] while insulin was available in 42% of the health centres.[18] However, statins, warfarin and clopidogrel are not available at healthcare centres. No data were available for CVD risk stratification or TC measurement at the primary healthcare level, and secondary prevention of ARF and RHD in public-sector health facilities.

Secondary prevention and management

No data are available on high-risk patients with AF who were being treated with oral anticoagulants, or those with a history of CVD taking aspirin, statin and at least one antihypertensive agent. In a study by Oelke *et al.*,[19] it was noted that of those participants who had ever been told they had hypertension, 76.7% received medication. In another study looking at hypertension management in rural clinics, of the patient visits, 21.1% had an antihypertensive medication prescribed.[20]

Part D: Cardiovascular disease governance

Zambia's National Health Strategic Plan (NHSP) 2017–2021 addresses NCD, which includes CVD as one of the top 10 causes of mortality over the five years, 2011 to 2015.[21] Although an operational non-communicable diseases unit in the ministry of health (MoH) is responsible for NCD,[22] no budget has been dedicated to CVD.[23] An RHD ongoing control programme, BeatRHD Zambia, established in 2012, addresses and prioritises the problem in Zambia.[14,24] Furthermore, a national surveillance system that includes CVD and their risk factors has been implemented by the MoH.[7]

Zambia has introduced a comprehensive national multi-sectoral tobacco co-ordination and control plan through the WHO framework convention on control (FCTC).[25] Collaborative projects between the MoH and non-health ministries for CVD interventions have been mentioned.[26] However, government expenditure specifically allocated to CVD healthcare is not known to have been reported. As part of the WHO-CHOICE project, the benefits of CVD prevention and control for population health and the economy have been modelled.[27,28]

Assessment of policy response

No legislation exists that mandates health financing for CVD. The Southern African Development Community adopted a 'procurement co-operation' strategy to procure essential medicines at affordable prices, including those for CVD.[29] The MoH manages procurement through the procurement unit, however, it could not be established how many and which of these medicines were below the international benchmark of affordable prices.[29] No court orders protecting patients' rights and mandating improved CVD interventions, facilities, health system procedures or resources are available.

Legislation banning smoking in indoor work and public places has been introduced as has that protecting against tobacco industry interference.[25] However, tobacco advertising, promotion and sponsorship, and clear visible warnings on more than half the packaging have not been legalised.[25]

Policies ensuring equitable nationwide access to healthcare professionals and facilities have been implemented.[30] Although screening for CVD risk factors have been reported in a few studies, there is no policy ensuring that of high-risk CVD individuals. No sustainable funding for CVD so-called 'sin' taxes has been noted. Excise tax on unhealthy foods or sugar-sweetened beverages was also not instituted,[31] while that on the final consumer price of tobacco was 25%,[25] and that of alcohol products reported being more than 10%.[32]

No legislation is available banning the marketing of unhealthy foods to minors or mandating clear and visible warnings on unhealthy foods. Although policy interventions promoting a diet to reduce CVD risk have been mentioned, appropriate programmes and policies have yet to be developed to protect the most vulnerable peoples in the country.[33,34] Zambia does not have any policy interventions that facilitate PA.

Stakeholder action

In 2017, advocacy for CVD policies and programmes by non-governmental organisations such as the Diabetic Association of Zambia and ZAHESFO were addressed.[13] Involvement of patient organisations in CVD/NCD prevention and management advocacy has been reported along with that for RHD by advocacy champions.[35] Civil society involvement in the development and implementation of a national tobacco control plan was also reported.[25] Similarly, civil society involvement in the national multi-sectoral co-ordination mechanism for NCD/CVD was mentioned in the Seventh National Development Plan and National Assembly of Zambia in 2017.[36,37] Activities by cardiology professional associations to reduce the burden of premature CVD by 25% in 2025 are in progress.[13] Hypertension screening by businesses at workplaces was suggested, and a repeated call was made in 2019 to curb the high prevalence.[38,39]

The following strengths, weaknesses, threats and priorities are summarised, as part of the data gathered for Zambia.

Strengths

Considering various sources, the data from STEPS 2017 were regarded most accurate to be included in this report.[7] The NHSP of 2017, along with the Seventh National Development Plan, identified strategies and programmes that should contribute to a healthy nation, ensuring all Zambians have access to quality health services by 2030.[21,36] In a communique, the government is committed to establish and strengthen multi-sectoral plans and policies to prevent and control NCD in the Zambian population.[40,41]

A comprehensive national multi-sectoral tobacco co-ordination and control plan has been introduced through the WHO FCTC, although it does not include the banning of advertising, promotion and sponsorship or clear, visible warnings on more than 50% of the packaging.[25]

May Measurement Month (MMM), a global initiative that was introduced in 2017 to raise awareness of raised BP in sub-Saharan African countries has opened opportunities for workplace screening of hypertension and related CVD risk factors.[39]

Threats

As in most sub-Saharan African countries, the burden of NCD, which is related to risky lifestyle behaviour and consequent morbidity and mortality is increasing in Zambia.[21] The increasing burden of premature mortality from NCD is a cause for concern, especially since after saving the young from dying prematurely from communicable diseases, they die prematurely from NCD.

Tobacco use among Zambian adolescents is higher than in most other African countries under investigation, especially in females and calls for urgent intervention (Table 1).

As mentioned, overweight and obesity tend to be a problem in most African countries, although in Zambia, these figures are lower than the global data at 38.9 and 13.1%, respectively.[7] Another reason for concern is the high percentage of young people who are insufficiently physically active.[4]

Weaknesses

Health services in Zambia are fragmented and unevenly distributed, with the result of them being inefficient and ineffective. Therefore, many rural and peri-urban residents have inadequate access to healthcare services.[30] In a study on hypertension management in rural primary health facilities, similar findings were reported.[20]

The inconsistent supply of essential medicines is a crucial problem in Zambia, which is attributed to various factors, particularly inadequate funding and difficulties with procurement, distribution logistics, and storage management, among other things.[30]

Priorities

According to Chiluba *et al*.,[38] many opportunities exist for developing interventions for optimal screening, treatment and prevention of CVD in Zambia. Oelke *et al*.,[19] in 2015, suggested initiatives to increase access to health education to reduce the risk of developing hypertension, improve early detection, and encourage lifestyle changes and medication adherence. In another study, facilitating regular and systematic data reviews to improve hypertension diagnosis and management, shifting the focus on performance indicator development and validation in low-resource contexts had been recommended.[20] Policy makers need to engage with communities more effectively to develop successful public health strategies to prevent, detect and manage hypertension, primarily in rural areas.[19]

In 2018, the committee on health, community development and social services of the National Assembly of Zambia published their findings in a Report with about 23 recommendations addressing NCD.[37] Some of these advise the government to:

- prioritise the prevention and control of NCD through more robust community sensitisation and awareness
- invest as a matter of urgency in capacity building of human resources, especially in cardiac surgery, endocrinology and cardiology, among other areas
- undertake routine screening for sugar levels as for BP measurement at all health facilities
- put in place measures to strengthen health systems in the country to help prevent and control NCD through primary healthcare and universal health coverage, in line with the WHO Global NCD Action Plan 2013–2020.[42]

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